

RF Exposure Report

Report No.: SA170918E11

FCC ID: BKMFBJ26H005

Test Model: J26H005

Received Date: Sep. 18, 2017

Test Date: Sep. 27, 2017

Issued Date: Nov. 23, 2017

Applicant: Seiko Epson Corporation

Address: 3-3-5 Owa Suwa-shi Nagano-Ken 392-8502, Japan

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.

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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits for Maximum Permissible Exposure (MPE)	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
2.4 Antenna Gain	5
2.5 Calculation Result of Maximum Conducted Power	6

Release Control Record

Issue No.	Description	Date Issued
SA170918E11	Original release.	Nov. 23, 2017

1 Certificate of Conformity

Product: 11ac+BT Combo Module

Brand: Epson

Test Model: J26H005

Sample Status: ENGINEERING SAMPLE

Applicant: Seiko Epson Corporation

Test Date: Sep. 27, 2017

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : Wendy Wu , **Date:** Nov. 23, 2017
Wendy Wu / Specialist

Approved by : May Chen , **Date:** Nov. 23, 2017
May Chen / Manager

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	f/1500	30
1500-100,000	1.0	30

f = Frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user.

So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Ant No.	Antenna Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type
1	3.09	2.4~2.4835	PCB Printed	none
	5.94	5.15~5.25		
	5.94	5.25~5.35		
	6.29	5.47~5.725		
	7.12	5.725~5.85		
2	2.53	2.4~2.4835	PCB Printed	none
	3.94	5.15~5.25		
	3.94	5.25~5.35		
	5.10	5.47~5.725		
	5.23	5.725~5.85		

Note: This report chose the max. Antenna gain to do final test.

2.5 Calculation Result of Maximum Conducted Power

For WLAN:

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	316.957	3.09	20	0.12845	1
5180-5240	102.802	5.94	20	0.08030	1
5260-5320	97.949	5.94	20	0.07651	1
5500-5700	92.683	6.26	20	0.07793	1
5745-5825	120.504	7.12	20	0.12352	1

For Bluetooth:

BT-EDR

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	11.143	3.09	20	0.00452	1

BT-LE

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	14.791	3.09	20	0.00599	1

Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz + Bluetooth = $0.12845 / 1 + 0.12352 / 1 + 0.00599 / 1 = 0.25796$

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